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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,969	12/26/2001	Solon J. Spiegel	P-3856-US	2209
27130	7590	10/12/2005	EXAMINER	
EITAN, PEARL, LATZER & COHEN ZEDEK LLP 10 ROCKEFELLER PLAZA, SUITE 1001 NEW YORK, NY 10020			BAYARD, EMMANUEL	
			ART UNIT	PAPER NUMBER
			2638	

DATE MAILED: 10/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/025,969

Applicant(s)

SPIEGEL ET AL.

Examiner

Emmanuel Bayard

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 27 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 19-20, 22-27 is/are rejected.
- 7) ☒ Claim(s) 13-18 and 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This is in response to amendment filed on 7/27/05 in which claims 1-27 are pending. The applicant's amendments have been fully considered but they are moot based on the new ground of rejection therefore this case is made final.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Bar-David et al U.S. Patent No 5,623,511.

As per claim 1, Bar-David et al teaches a baseband module (see fig.6 element 600 and col.10, lines 43, 52) adapted to filter (see col.10, line 16) a received signal by programming an impulse response of a filter to a programmable convolver (see fig.6 elements 640, 645 and col.10, lines 23-26, 60-67 and col.15, lines 39-45 and col.18, lines 25-33) based on a wireless communication system (see abstract) type information included in the received signal.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bar-David et al U.S. Patent No 5,623,511 in view of Dent U.S. Patent no 6,404,821 B1.

As per claim 2, Bar-David et al teaches all the features of the claimed invention including a memory to store (see claim 1 above and col.6, lines 20-24 and col.19, lines 2-15) the impulse response of the filter except a digital to analog converter (DAC) to provide a time phase of a stored impulse response of the filter to the programmable convolver.

Dent teaches a digital to analog converter (DAC) (see fig.5 element 67 or 68 and col.8, lines 40-45) to provide a time phase of a stored impulse response of the filter to the programmable convolver.

It would have been obvious to one of ordinary skill in the art to implement the teaching of Dent into Bar-David as to convert the elevated sample rate to analog waveforms using the interpolation and Sigma-Delta technique as taught by Dent (see col.8, lines 40-48).

As per claim 5, Dent teach a resolution of the DAC and a sampling rate of the DAC are set according to the modulated signal characteristics (see col.8, lines 40-45). Furthermore implementing such teaching into Bar-David would have been obvious to one skilled in the art as to convert the elevated sample rate to analog waveforms using the interpolation and Sigma-Delta technique as taught by Dent (see col.8, lines 40-48).

As per claim 6, Bar-David and Dent in combination would teach, wherein a length of the impulse response is set according the modulated signal characteristics in order to adjust the scaling so that the complex vector would always be of length unity.

As per claim 7, Dent teaches, further comprising a second DAC (see fig.5 element 67 or 68 and col.8, lines 40-45). Furthermore implementing such teaching into Bar-David would have been obvious to one skilled in the art as to convert the elevated sample rate to analog waveforms using the interpolation and Sigma-Delta technique as taught by Dent (see col.8, lines 40-48).

As per claim 8, Bar-David teaches wherein the memory comprises an impulse response of a first filter and an impulse response of a second filter, and the programmable convolver is programmed with one of the impulse response of the first filter and the impulse response of the second filter according to the modulated signal characteristics (see col.18, lines 40-45 and col.19, lines 2-14)

As per claim 9, Bar-David teaches, wherein the programmable convolver is a complex programmable convolver (see col.18, lines 23-30).

As per claim 10, Dent teaches, wherein the filter is a programmable convolver having an analog output see fig.5 element 67 or 68 and col.8, lines 40-45). Furthermore implementing such teaching into Bar-David would have been obvious to one skilled in the art as to convert the elevated sample rate to analog waveforms using the interpolation and Sigma-Delta technique as taught by Dent (see col.8, lines 40-48).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bar-David et al U.S. patent No 5,623,511 in view of Dent U.S. Patent No 6,404,821 B1 and in further view of Mori et al U.S. Patent No 5,347,537.

As per claim 3, Bar-David and Dent teaches all the features of the claimed invention except an automatic gain control to control an output signal level of the programmable convolver.

Mori teaches an automatic gain control to control an output signal level of the programmable convolver (see fig.1b element 27 and col.15, lines 25-30).

It would have been obvious to one of ordinary skill in the art to implement the teaching of Mori into Bar-David and Dent as to prevent erroneous operation due to noise in the output the detecting circuit as taught by Mori (see col.15, lines 22-24).

As per claim 4, Bar-David teaches, wherein the baseband module further comprises: a filter (see col.10, lines 15-16) operably coupled to an input of the programmable convolver to filter the modulated signal, wherein an impulse response (see col.18, lines 30-43) of the filter is programmed according to modulated signal characteristics.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 11-12, 19-20, 23-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim et al U.S. Patent No 6,151,487.

As per claims 11 and 23, Kim et al teaches a multi-mode receiver to receive signals of two communication systems, wherein the receiver is adapted to select (switch) between demodulation modes (see figs. 2a, 3 elements 270, 300 and col.2, lines 29-41 and col.7, lines 35-50 and col.9, lines 4-10) by programming a baseband module based on cellular channel is the same as the claimed (wireless communication type information) (se col.6, line 8) included in a received signal; and a memory to store (see col.7, lines 60-63 and col.8, lines 1-4) a first impulse response and a second impulse response to program a filter (see col.5, lines 5-6 and col.6, lines 35-37 and col.16, lines 3-10) of the baseband module.

As per claim 12, Kim et al teaches complex baseband is the same as the claimed baseband module comprises: an in-phase (I) channel to filter an I signal of a modulated signal and a quadrature (Q) channel to filter a Q signal of the modulated signal (see col.5, line 6).

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As per claim 19, Kim et al inherently teaches wherein the multi-mode receiver is a direct conversation multi-mode receiver.

As per claim 24, Kim et al teaches an equalization function (see fig.2a element 254). Therefore setting a frequency response of a filter by modifying the structure of the filter and setting the number of poles of the filter is inherently taught by Kim's equalizer.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al U.S. Patent No 6,151,487 in view of Bar-David U.S. Patent No 5,623,511.

As per claim 20, Kim et al teaches all the features of the claimed invention except wherein the I channel and the Q channel comprise programmable complex convolvers.

Bar-David et al teaches I channel and the Q channel comprise programmable complex convolvers (see fig.6 elements 640, 645 and col.10, lines 23-26, 60-67 and col.15, lines 39-45 and col.18, lines 25-33).

It would have been obvious to one of ordinary skill in the art to implement the teaching of Bar-David into Kim as to include purely orthogonal pulse position modulated signals, where the main lobe the transmitted pulse, upon matched filtering in the receiver has a given magnitude and each of the side lobes has a magnitude



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approximately equal to zero as taught by Bar-David (see col.10, lines 33-36).

Furthermore implementing such teaching into

As per claim 22, Bar-David et al teaches, wherein the first filter and the second filter are programmable convolvers (see fig.6 elements 640, 645 and col.10, lines 23-26, 60-67 and col.15, lines 39-45 and col.18, lines 25-33). Furthermore implementing such teaching into Kim would have been obvious to one skilled in the art as to include purely orthogonal pulse position modulated signals, where the main lobe the transmitted pulse, upon matched filtering in the receiver has a given magnitude and each of the side lobes has a magnitude approximately equal to zero as taught by Bar-David (see col.10, lines 33-36).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al U.S. Patent No 6,151,487 in view of Boesch et al U.S. Patent No 6,100,827.

As per claim 25, Kim et teaches all the features of the claimed invention except setting a sampling rate and a resolution to a digital to analog converter to switch between receiving modes of the multi-mode receiver.

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Boesch et al teaches setting a sampling rate and a resolution to a digital to analog converter to switch between receiving modes of the multi-mode receiver (see col.5, lines 32-43).

It would have been obvious to one of ordinary skill in the art to implement the teaching of Boesch et al into Kim as to perform the operation using both wideband and narrowband signals as taught by Boesch (see col.5, lines 32-43).

As per claim 26, Kim and Boesch in combination would teach, wherein a length of the impulse response is set according the modulated signal characteristics in order to adjust the scaling so that the complex vector would always be of length unity.

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al U.S. Patent No 6,151,487 in view of Boesch et al U.S. Patent No 6,100,827 and in further view of Mori et al U.S. Patent No 5,347,537.

As per claim 3, Kim and Boesch teaches all the features of the claimed invention except a combined analog and digital gain control to control a signal level of the programmable convolver.

Mori teaches a combined analog and digital gain control to control a signal level of the programmable convolver (see fig.1b element 27 and col.15, lines 25-30).

It would have been obvious to one of ordinary skill in the art to implement the teaching of Mori into Kim and Boesch as to prevent erroneous operation due to noise in the output the detecting circuit as taught by Mori (see col.15, lines 22-24).

***Allowable Subject Matter***

Claims 13-18 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter: the prior arts of record fail to anticipate or render obvious the following recited features: a second filter having a programmable frequency response, operably coupled to an output of the buffer and to an input of a programmable convolver as recited in claims 13, 16.

***Conclusion***

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tanaka et al U.S. Patent No 5,598,478 teaches a sound image.

Velazquez et al U.S. Patent No 6,593,880 B2 teaches a communication system (\*).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is 571 272 3016. The examiner can normally be reached on Monday-Friday (7:Am-4:30PM)

Alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vanderpuye Kenneth can be reached on 571 272 3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

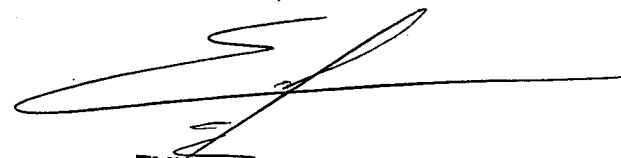
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Emmanuel Bayard  
Primary Examiner  
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EMMANUEL BAYARD  
PRIMARY EXAMINER